REMARKS

Claims 1-22 are active in this application. Applicants affirm the election of Group I, Claims 1-12, with traverse. Applicants request that the Examiner reconsider the restriction with respect to Claim 13 which is a catalyst comprising the composite oxide powder according to elected Claim 1. With respect to process Claims 14-22, Applicants request rejoinder of these claims upon finding that the elected Claims 1-12 are allowable (according to the procedure set forth in MPEP § 821.04).

Applicants wish to thank Examiners Wright and Bos for the helpful and courteous discussion held with the Applicants' undersigned representative on December 9, 2003. During this discussion, the undersigned explained to the Examiners that while the prior art describes various composite oxides each having various particle sizes, the prior art fails to describe the claimed composite oxide powder which has "a pore volume of not less than 2 cc/g" as claimed. Thus, for this reason alone, the rejections set forth in the Official Action mailed October 8, 2003 should be withdrawn.

In addition, Applicants directed the Examiners' attention to the specification which describes and demonstrates the advantages of the claimed composite oxide powder, for example, on page 16 in paragraph [0050] the Applicants have described that catalysts containing the composite oxide powder which also has a "noble metal loaded thereon, the noble metal is suppressed from growing granularly, even after a high-temperature durability test and maintained in a highly dispersed state and exhaust gases can easily reach activity points. So, the catalyst exhibits high catalytic activities. The catalyst of the present invention can maintain high CO conversion efficiency at low temperatures, which is the merit of the noble metal-loaded first metal oxide, even after a high-temperature durability test, and can maintain high HC conversion efficiency and H^2 generating activities due to water gas shift even after a high-temperature durability test."

These advantages are demonstrated in the examples in the application and the undersigned directed the Examiners' attention to Table 1 on page 25 which describes various exemplified compositions, where the molar ratio of the components and the pore volume are identified. In particular, the undersigned pointed to the difference between Examples 1-12 and the Comparative Example 1 which has a pore volume of less than 2 cc/g. These catalysts were then cut into test pieces of 35 cm^3 and subjected to a durability test at 900°C for five hours in a fuel-rich/fuel-lean variation atmosphere (see the discussion on page 26 of the application). The results of these data are presented in Table 4. A discussion of the data is summarized in paragraph [0098] on page 29 a portion of which is reproduced below:

> It is also clear from Table 4 that the catalysts of the respective examples had improved catalytic activities after the durability test than that of Comparative Example 1. Comparison between Examples 1 to 6 demonstrate that the compositional ratio of the first metal oxide and the second metal oxide had an optimal value. As evidenced by the fact that the catalysts of Examples 9 to 11 had particularly high catalytic activities and small CeO_2 particle diameters, the addition of the third metal oxide further improved thermal stability.

Since the prior art references do not describe a composite oxide powder which has a pore volume of not less than 2 cc/g nor the attendant advantages therein, the present claims would not have been obvious in view of those references.

Furthermore, with respect to the Examiner's assertion that Heidemann teaches the shell structure, for example, in Claims 7 and 8, Applicants note the following differences between the present invention and the relevant disclosure of Heidemann. The shell structure of Heidemann refers to the shape of the support on which powder is coated but Heidemann does not describe that the configuration of the secondary particles of the powder have a shell structure as claimed. Illustrative of the preparation procedure of the shell structure in regards to the present invention is shown in the attached diagram. Clearly then, the Heidemann disclosure of applying catalytically active metal oxides onto a support material in the form of

shell (e.g., as described in col. 4, lines 17-22) is different from the shell shape in the present claims.

Accordingly, Applicants request withdrawal of the rejections of Claims 1-12 under 35 U.S.C. § 103(a) over Zhang et al. in view of Heidemann et al., under 35 U.S.C. § 103(a) over Suzuki et al. or Brezny et al. or Suzuki et al. each in view of Heidemann et al.; under 35 U.S.C. § 103(a) over Rajaram et al. or Dettling et al. or Suda et al. each in view of Heidemann.

Finally, Applicants request that this application be passed to issuance.

Respectfully submitted,

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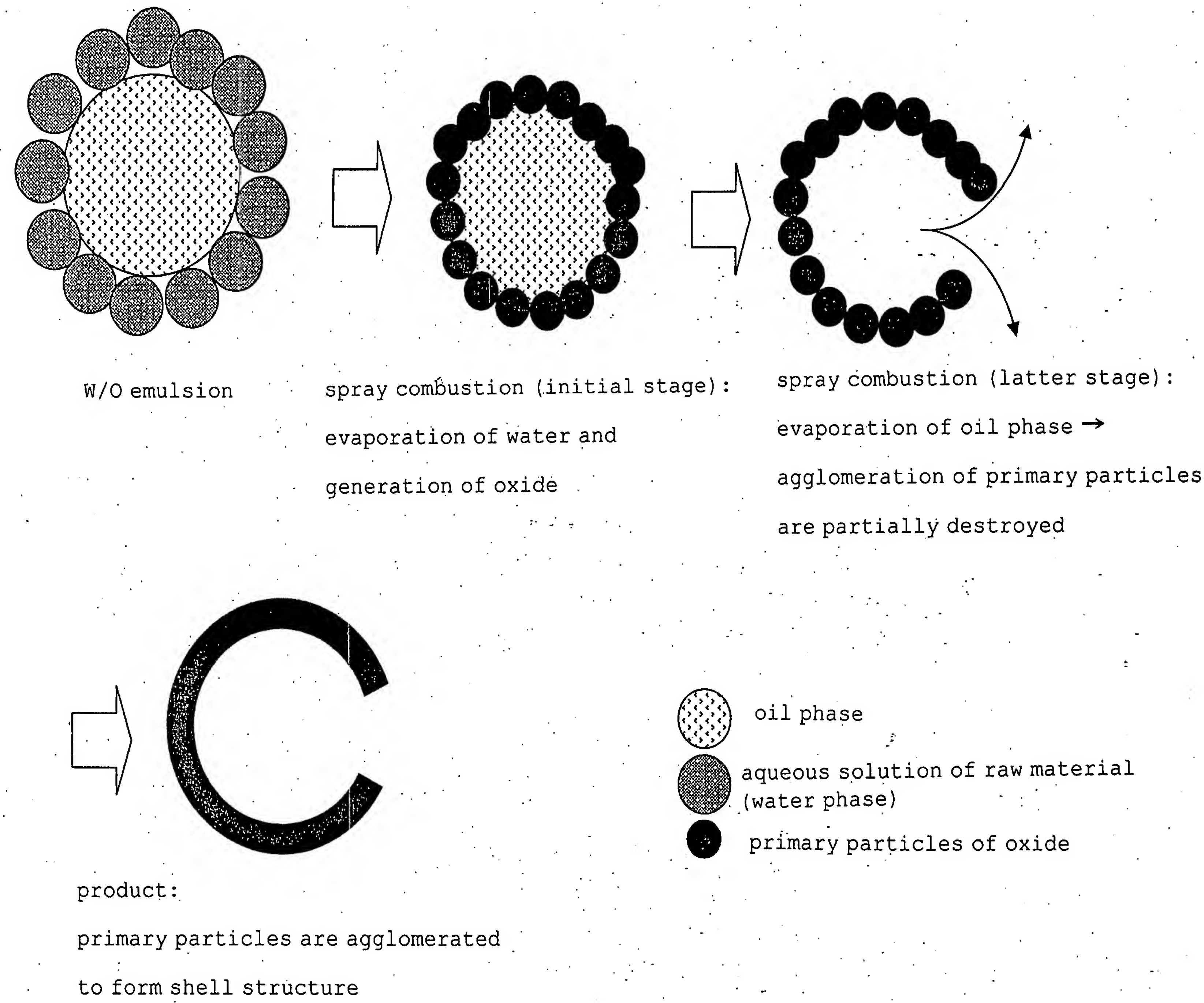
W/O emulsion
spray combustion (initial stage):
evaporation of water and
generation of oxide
spray combustion (latter stage):
evaporation of oil phase →
agglomeration of primary particles
are partially destroyed
product:
primary particles are agglomerated
to form shell structure
oil phase
aqueous solution of raw material
(water phase)
primary particles of oxide